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01/6

#19



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## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/029,221C

DATE: 01/22/2003

TIME: 15:48:47

Input Set : A:\Div14621.app

Output Set: N:\CRF4\01222003\J029221C.raw

3 <110> APPLICANT: SHORT, JAY M.  
 4 DJAVAKHISHVILI, TSOTNE D.  
 5 FREY, GERHARD J.  
 7 <120> TITLE OF INVENTION: EXONUCLEASE-MEDIATED NUCLEIC ACID REASSEMBLY IN  
 8 DIRECTED EVOLUTION  
 10 <130> FILE REFERENCE: DIV-1460-21  
 12 <140> CURRENT APPLICATION NUMBER: 10/029,221C  
 C--> 13 <141> CURRENT FILING DATE: 2003-01-10  
 15 <150> PRIOR APPLICATION NUMBER: 60/008,311  
 16 <151> PRIOR FILING DATE: 1995-12-07  
 18 <150> PRIOR APPLICATION NUMBER: 60/008,316  
 19 <151> PRIOR FILING DATE: 1995-12-07  
 21 <160> NUMBER OF SEQ ID NOS: 13  
 23 <170> SOFTWARE: PatentIn Ver. 2.1  
 25 <210> SEQ ID NO: 1  
 26 <211> LENGTH: 22  
 27 <212> TYPE: DNA  
 28 <213> ORGANISM: Artificial Sequence  
 30 <220> FEATURE:  
 31 <223> OTHER INFORMATION: Description of Artificial Sequence: Illustrative  
 32 restriction enzyme recognition site  
 34 <220> FEATURE:  
 35 <221> NAME/KEY: modified\_base  
 36 <222> LOCATION: (7)..(22)  
 37 <223> OTHER INFORMATION: a, t, c or g; this range may encompass 14 or 16 nucleotides  
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 W- 40 ctgaagnnnnn nnnnnnnnnnn nn 22  
 43 <210> SEQ ID NO: 2  
 44 <211> LENGTH: 5  
 45 <212> TYPE: PRT  
 46 <213> ORGANISM: Artificial Sequence  
 48 <220> FEATURE:  
 49 <223> OTHER INFORMATION: Description of Artificial Sequence: Linker peptide  
 51 <400> SEQUENCE: 2  
 52 Gly Gly Gly Gly Ser  
 53 1 5  
 56 <210> SEQ ID NO: 3  
 57 <211> LENGTH: 15  
 58 <212> TYPE: PRT  
 59 <213> ORGANISM: Artificial Sequence  
 61 <220> FEATURE:  
 62 <223> OTHER INFORMATION: Description of Artificial Sequence: Linker peptide  
 64 <400> SEQUENCE: 3

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66 1 5 10 15
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71 <212> TYPE: DNA
72 <213> ORGANISM: Artificial Sequence
74 <220> FEATURE:
75 <223> OTHER INFORMATION: Description of Artificial Sequence: Illustrative
76 restriction enzyme recognition site
78 <220> FEATURE:
79 <221> NAME/KEY: modified_base
80 <222> LOCATION: (6)..(10)
81 <223> OTHER INFORMATION: a, t, c or g
83 <400> SEQUENCE: 4
W--> 84 gagtcnnnnn 10
87 <210> SEQ ID NO: 5
88 <211> LENGTH: 10
89 <212> TYPE: DNA
90 <213> ORGANISM: Artificial Sequence
92 <220> FEATURE:
93 <223> OTHER INFORMATION: Description of Artificial Sequence: Illustrative
94 restriction enzyme recognition site
96 <400> SEQUENCE: 5
97 cgcgctggac 10
100 <210> SEQ ID NO: 6
101 <211> LENGTH: 223
102 <212> TYPE: DNA
103 <213> ORGANISM: Artificial Sequence
105 <220> FEATURE:
106 <223> OTHER INFORMATION: Description of Artificial Sequence: Formula
107 sequence
109 <220> FEATURE:
110 <221> NAME/KEY: modified_base
111 <222> LOCATION: (1)..(10)
112 <223> OTHER INFORMATION: a, t, c or g; this range may encompass 1-10 nucleotides
114 <220> FEATURE:
115 <221> NAME/KEY: modified_base
116 <222> LOCATION: (21)..(120)
117 <223> OTHER INFORMATION: a, t, c or g; this range may encompass 1-100 nucleotides
120 <220> FEATURE:
121 <221> NAME/KEY: modified_base
122 <222> LOCATION: (124)..(223)
123 <223> OTHER INFORMATION: a, t, c or g; this range may encompass 0-100 nucleotides
126 <400> SEQUENCE: 6
W--> 127 nnnnnnnnnn aagggaggag nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 60
W--> 128 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120
W--> 129 atgnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 180
W--> 130 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnn 223
133 <210> SEQ ID NO: 7

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## RAW SEQUENCE LISTING

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Input Set : A:\Div14621.app

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134 <211> LENGTH: 215
135 <212> TYPE: DNA
136 <213> ORGANISM: Artificial Sequence
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139 <223> OTHER INFORMATION: Description of Artificial Sequence: Formula
140     sequence
142 <220> FEATURE:
143 <221> NAME/KEY: modified_base
144 <222> LOCATION: (1)..(10)
145 <223> OTHER INFORMATION: a, t, c or g; this range may encompass 1-10 nucleotides
147 <220> FEATURE:
148 <221> NAME/KEY: modified_base
149 <222> LOCATION: (16)..(115)
150 <223> OTHER INFORMATION: a, t, c or g; this range may encompass 1-100 nucleotides
152 <220> FEATURE:
153 <221> NAME/KEY: modified_base
154 <222> LOCATION: (116)..(215)
155 <223> OTHER INFORMATION: a, t, c or g; this range may encompass 0-100 nucleotides
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W--> 159 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120
W--> 160 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 180
W--> 161 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnn                                215
164 <210> SEQ ID NO: 8
165 <211> LENGTH: 123
166 <212> TYPE: DNA
167 <213> ORGANISM: Artificial Sequence
169 <220> FEATURE:
170 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
172 <220> FEATURE:
173 <221> NAME/KEY: modified base
174 <222> LOCATION: (24)..(123)
175 <223> OTHER INFORMATION: a, t, c or g; this range may encompass 10-100 nucleotides
177 <400> SEQUENCE: 8
W--> 178 ctagaagaga ggagaaaacc atgnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 60
W--> 179 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120
W--> 180 nnn                                123
183 <210> SEQ ID NO: 9
184 <211> LENGTH: 121
185 <212> TYPE: DNA
186 <213> ORGANISM: Artificial Sequence
188 <220> FEATURE:
189 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
191 <220> FEATURE:
192 <221> NAME/KEY: modified_base
193 <222> LOCATION: (22)..(121)
194 <223> OTHER INFORMATION: a, t, c or g; this range may encompass 10-100 nucleotides
196 <400> SEQUENCE: 9
W--> 197 gatcaaaggc gcgcctgcag gnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn 60

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W--> 198 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 120  
W--> 199 n 121

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203 <211> LENGTH: 23  
204 <212> TYPE: DNA  
205 <213> ORGANISM: Artificial Sequence  
207 <220> FEATURE:  
208 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer  
210 <400> SEQUENCE: 10  
211 ctagaaggga ggagaaaacc atg 23  
214 <210> SEQ ID NO: 11  
215 <211> LENGTH: 21  
216 <212> TYPE: DNA  
217 <213> ORGANISM: Artificial Sequence  
219 <220> FEATURE:  
220 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer  
222 <400> SEQUENCE: 11  
223 gatcaaaggc ggcctgcag g 21  
226 <210> SEQ ID NO: 12  
227 <211> LENGTH: 39  
228 <212> TYPE: DNA  
229 <213> ORGANISM: Artificial Sequence  
231 <220> FEATURE:  
232 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer  
234 <400> SEQUENCE: 12  
235 ctagaaggga ggagaattac atgaagcggc ttttagccc 39  
238 <210> SEQ ID NO: 13  
239 <211> LENGTH: 27  
240 <212> TYPE: DNA  
241 <213> ORGANISM: Artificial Sequence  
243 <220> FEATURE:  
244 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer  
246 <400> SEQUENCE: 13  
247 agctaagggt caaggccgca cccgagg 27

RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/10/029,221C

DATE: 01/22/2003

TIME: 15:48:48

Input Set : A:\Div14621.app

Output Set : N:\CRF4\01222003\J029221C.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; N Pos. ~~7~~, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, ~~22~~  
Seq#:4; N Pos. ~~6~~, 7, 8, 9, 10  
Seq#:6; N Pos. ~~1, 2, 3, 4, 5, 6, 7, 8, 9, 10~~, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33  
Seq#:6; N Pos. 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53  
Seq#:6; N Pos. 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73  
Seq#:6; N Pos. 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93  
Seq#:6; N Pos. 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109  
Seq#:6; N Pos. 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, ~~120~~, 124, 125, 126, 127  
Seq#:6; N Pos. 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142  
Seq#:6; N Pos. 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157  
Seq#:6; N Pos. 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172  
Seq#:6; N Pos. 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187  
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Seq#:6; N Pos. 218, 219, 220, 221, 222, ~~223~~  
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Seq#:7; N Pos. 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48  
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Seq#:7; N Pos. 107, 108, 109, 110, 111, 112, 113, ~~114, 115~~, 116, 117, 118, 119, 120, 121  
Seq#:7; N Pos. 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136  
Seq#:7; N Pos. 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151  
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Seq#:7; N Pos. 212, 213, 214, ~~215~~  
Seq#:8; N Pos. 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43  
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Seq#:8; N Pos. 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117  
Seq#:8; N Pos. 118, 119, 120, 121, 122, ~~123~~  
Seq#:9; N Pos. ~~22~~, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41  
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